

WHAT IS CLAIMED IS:

1. A substrate processing method including:
a first step of injecting droplets formed by mixing an alkaline solution and gas
5 with each other to a surface of a substrate; and
a second step of injecting droplets formed by mixing an acid solution and gas
with each other to the surface of said substrate after said first step.
2. The substrate processing method according to claim 1, wherein
10 said alkaline solution is a mixed solution containing ammonia water and
hydrogen peroxide water.
3. The substrate processing method according to claim 2, wherein
said acid solution is a mixed solution containing hydrochloric acid and
15 hydrofluoric acid.
4. A substrate processing method including:
a first step of supplying an alkaline solution imparted with megasonic vibrations
to a surface of a substrate; and
20 a second step of supplying an acid solution to the surface of said substrate after
said first step.
5. The substrate processing method according to claim 4, wherein
said alkaline solution is a mixed solution containing ammonia water and
25 hydrogen peroxide water.

6. The substrate processing method according to claim 5, wherein
said acid solution is a mixed solution containing hydrochloric acid and
hydrofluoric acid.

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7. A substrate processing method including:
a first step of supplying an alkaline solution to a surface of a substrate;
a second step of supplying an acid solution to the surface of said substrate after
said first step; and

10 a third step of supplying said alkaline solution to the surface of said substrate
after said second step, wherein

at least either supply of said acid solution in said second step or supply of said
alkaline solution in said third step is injection of droplets formed by mixing said solution
with gas.

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8. The substrate processing method according to claim 7, wherein
only supply of said alkaline solution in said first step and said third step is
injection of droplets formed by mixing said alkaline solution with gas.

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9. The substrate processing apparatus according to claim 8, wherein
said alkaline solution is a mixed solution containing ammonia water and
hydrogen peroxide water.

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10. The substrate processing method according to claim 9, wherein
said acid solution is a mixed solution containing hydrochloric acid and

hydrofluoric acid.

11. A substrate processing method including:

a first step of supplying an alkaline solution to a surface of a substrate;

5 a second step of supplying an acid solution to the surface of said substrate after said first step; and

a third step of supplying said alkaline solution to the surface of said substrate after said second step, wherein

10 at least either supply of said acid solution in said second step or supply of said alkaline solution in said third step is supply of said solution imparted with megasonic vibrations.

12. The substrate processing method according to claim 11, wherein

15 only supply of said alkaline solution in said first step and said third step is supply of said alkaline solution imparted with megasonic vibrations.

13. The substrate processing apparatus according to claim 12, wherein

20 said alkaline solution is a mixed solution containing ammonia water and hydrogen peroxide water.

14. The substrate processing method according to claim 13, wherein

said acid solution is a mixed solution containing hydrochloric acid and hydrofluoric acid.

25 15. A substrate processing apparatus comprising:

a first bi-fluid nozzle forming droplets by mixing an alkaline solution and gas with each other and injecting said droplets to a surface of a substrate; and

a second bi-fluid nozzle forming droplets by mixing an acid solution and gas with each other and injecting said droplets to the surface of said substrate.

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16. A substrate processing apparatus comprising:

a first supply element supplying an alkaline solution imparted with megasonic vibrations to a surface of a substrate; and

10 a second supply element supplying an acid solution to the surface of said substrate.

17. A substrate processing apparatus comprising:

a first supply element supplying an alkaline solution to a surface of a substrate;

15 a second supply element supplying an acid solution to the surface of said substrate; and

a control element controlling said first supply element and said second supply element for successively performing supply of said alkaline solution by said first supply element, supply of said acid solution by said second supply element and supply of said alkaline solution by said first supply element, wherein

20 at least either said first supply element or said second supply element comprises a bi-fluid nozzle injecting droplets of said solution.

18. A substrate processing apparatus comprising:

a first supply element supplying an alkaline solution to a surface of a substrate;

25 a second supply element supplying an acid solution to the surface of said

substrate; and

a control element controlling said first supply element and said second supply element for successively performing supply of said alkaline solution by said first supply element, supply of said acid solution by said second supply element and supply of said
5 alkaline solution by said first supply element, wherein

at least either said first supply element or said second supply element comprises a nozzle supplying said solution imparted with megasonic vibrations.